Economic Bulletin.

26 June 2020



Agriculture: Unscarred to date, but COVID reality can still bite.

- The agricultural sector has come through the COVID lockdown largely unscarred.
- However, we caution that a global recession of unprecedented scale still looms large over the New Zealand economy and the agricultural sector.
- We expect COVID will knock overall New Zealand agricultural incomes later in the year, with key dairy and meat farmgate prices likely to be lower over the new season compared to last.
- By and large, though, the sector is likely to remain profitable, affording agriculture options that other sectors don't have.

Nathan Penny, Senior Agri Economist **&** +64 9 348 9114

In this bulletin, we delve into the COVID impact on the agricultural sector, breaking the impact into the 'lockdown', 'post-lockdown' and 'recession' phases. The bulletin starts with the high-level impacts on agriculture, and then digs into the specifics of the meat, dairy or horticulture sectors. We also explore the labour market implications and highlight some of the resultant opportunities that COVID has created for the agricultural sector.

COVID-driven global recession looms large.

COVID is big, and it's bad. Indeed, our shared lockdown experiences were a throwback to a different era, only our grandparents could comprehend.

And while New Zealand has escaped the worst health impacts (so far), we have been one of the few global exceptions. Generally, the pandemic has spared few nations, and for some, the worst may still be come as the pandemic epicentre continues to shift.

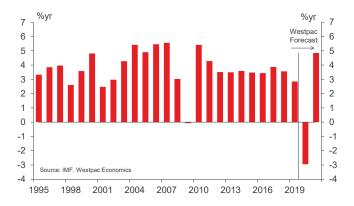
Similarly, in a connected world, the COVID economic consequences are shared. And while there are some isolated cases of economic winners, the more representative COVID story is in terms of the degree of impact and or timing.

At a high level, we expect COVID to take an unprecedented chunk out of global economic growth. Specifically, we forecast that global economy will shrink by 3% over 2020. For comparison, during the Global Financial Crisis, the global economy shrank by just 0.1% in 2009.

As a trading nation New Zealand is exposed. And, with over 90% of agricultural production exported, the agricultural sector is heavily exposed. Indeed, the sector will have to navigate materially lower global incomes and the subsequent broad shift lower in global demand over 2020 and beyond.



World economic growth



The COVID recession will be different.

While agriculture will certainly be impacted by the global recession, we think this time it will prove relatively resilient compared to some other sectors of the New Zealand economy.

This view owes to the fact that the COVID recession is different. The health-driven genesis has seen the initial phase of this recession play out differently to previous recessions where the initial shocks were economic or financial.

With a different catalyst, the timing of the hit to different industries and regions within the global and New Zealand economies has varied. In the first instance, this owed to the dynamics of the virus spread with Asian economies hit first, then Europe followed by the US. The pandemic also hit people-based industries like tourism, hospitality and transport harder and more immediately. Meanwhile, other industries like supermarkets, e-commerce and health have had little disruption and, in some cases, have even seen increases in sales and activity.

These COVID nuances and different timings have also applied to agriculture. First up, agricultural sectors rely on different export markets. For example, the beef sector is heavily reliant on the US, China is key for dairy, while Japan and the EU are relatively more important for kiwifruit. So depending on the path of the pandemic spread, some sectors have been able to temporarily divert exports to other markets, while for others diverting exports has been more difficult or even impractical.

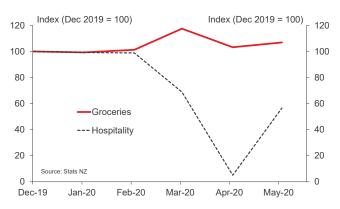
In addition, the timing of agricultural seasons has mattered. Indeed, the COVID outbreak unfortunately coincided with peak livestock slaughter, while for the kiwifruit sector the peak of export season came fortuitously later in the piece.

Similarly, agricultural product characteristics and place of consumption have mattered. At the extreme (and noting that it's not an agricultural product), crayfish exports have plummeted, owing to the fact that it is usually consumed fresh in restaurants. At the other extreme, kiwifruit exports have held up very well given the (perceived) health benefits of its high vitamin C content. Note, we delve more into these nuances by sector in the respective sections below.

Emerging from the lockdown, agriculture is largely unscarred...

Nuances aside, agriculture has emerged from what we consider the first phase of the COVID recession (i.e. the 'lockdown phase') relatively unscarred. Critically for agriculture, this relatively moderate impact stems from the fact that the Government prioritised food supply during the lockdown, with the sector and its supply chain classified as 'essential services'. And with supermarket shopping allowed during the lockdown, importantly households have also continued to have ample access to food.

NZ retail spending



Offshore, the same principles have applied. After some initial disruptions at ports, overseas governments have prioritised food imports along with other essential goods like medicines. Highlighting this fact was the creation of so-called 'green lanes' to fast-track these goods through customs and other border checks.

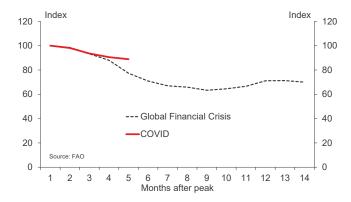
The first upshot of these moves has meant that agricultural economic activity and employment have been largely unchanged through the lockdown. We can see from the above chart that grocery sales held up very well during the lockdown, suggesting that food sales and activity through the food supply chain were similarly stable (some bottlenecks aside).

... although to date, overall agricultural export prices have fallen moderately.

However, food prices have not been immune during the lockdown phase. As noted in the chart above, while grocery spending has held up, hospitality spending has fallen sharply. And often it is at restaurants, cafes, bakeries and the like where the pointy end of food demand is. In other words, it is in these venues that consumers are, in normal circumstances, willing to pay highest prices for food.

Secondly, these moves ensured a base level of food demand and kept food prices relatively firm both here and abroad. The chart over the page shows how global food prices have held up relatively well to date compared to during the Global Financial Crisis.

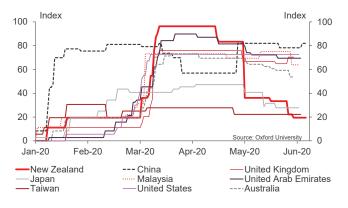
FAO Food Price Index



Short-term relief.

Beyond the lockdown phase, we expect that food prices will firm modestly and temporarily in what we are referring to as the post-lockdown phase (the next three months or so). Lockdown restrictions globally have eased over the last two months (see chart below) and restaurants et al. have started to re-open, albeit often with some restrictions. In this vein, we have already noted that, for example, meat and dairy prices have stabilised and ticked up a touch over May and June.

Government COVID Response Stringency Index - selected agricultural food export markets



The global recession will still bite.

However as the global recession deepens and global demand falters over the year, we expect the moderate downward pressure on overall agricultural export prices to return over what we are terming the 'recession phase' (late 2020 and 2021). Ultimately, the global recession will lower household incomes and this will crimp demand, including for food. Again, we anticipate that it will be at the pointy end of demand i.e. it is in restaurants and for premium foods and products that we'll see the biggest drop in demand and prices.

Our view that prices will fall only moderately also depends on some key assumptions. Firstly, the pandemic epicentre is shifting to Latin America and India, which are not key markets for New Zealand. However, if a second wave of infections

and a reversal of looser lockdown restrictions hit key export markets in China, broader Asia and Europe then we would expect a deeper and potentially longer slump in export prices.

Of course not all agricultural sectors are alike, so we anticipate some divergence in performance amongst sectors. In the sections on pages 5 and 6, we delve into the impact on meat, dairy and horticulture sectors. We'd also like to stress the very high levels of uncertainty around our views. Recent local events have reminded us that the COVID path ahead is likely to include setbacks and false starts. Moreover, the unprecedented nature of the pandemic means that our views are subject to change and we recommend that farmers and growers proceed with their 'eyes wide open' to COVID-related market developments.

Importantly, the overall sector is profitable and likely to remain so...

Meanwhile, the broader sector is benefitting from some offsetting macroeconomic factors, helping offset lower export prices and ensure that the sector remains broadly profitable. Interest rates have fallen to record lows, the New Zealand dollar has weakened and petrol prices have dipped. We also anticipate that labour market weakness will work out in the sector's favour and we explore this dynamic in the box over the page.

True, some costs have risen and the availability of some inputs has been stretched at times. For example, air freight availability and cost has risen, with this higher cost likely to further squeeze margins for niche and perishable products like cherries and berries (when they come into season). Also, anecdotally there were reports that the supply of feed imports like palm kernel could tighten due to COVID lockdown restrictions. But by and large, this hasn't been a major constraint on production to date.

It also pays to note that New Zealand agriculture entered 2020 from a position of strength. Notably, meat prices sat at or near record highs at the end of 2019, kiwifruit export values hit fresh record highs and the farmgate milk price sat at above a healthy \$7.00/kg. With this in mind, generally there is room for prices and incomes to fall moderately over the next 12 months and for the sector in aggregate to remain in the black.

... giving little fresh direction for land prices.

Turning to land prices, with lower (but still positive) profits balanced by lower interest rates, we expect recent land price trends to continue. Breaking those recent trends down by sector, dairy land prices have fallen, sheep/beef land prices have been flat/up, while horticultural land prices have firmed.

The wildcard for land prices is confidence levels. Confidence has been very low over recent years, particularly over this government's term and the accompanying ramp up in policy activity, both proposed and enacted. However, there is a sense from some that agriculture has come up trumps during the lockdown. If this sentiment does broaden and strengthen, then land prices could strengthen relative to recent trends.

Labour market - One-time only offer.

By and large we expect the sector will remain profitable through 2020 and 2021. With some other sectors not faring as well, this dynamic is likely to afford agricultural businesses options that others do not have.

One area that this opportunity is going to present is in the labour market. Notably, we expect the unemployment rate to nearly double from 4.2% in the March 2020 quarter to 8% by the September quarter.

In the first instance, the obvious implications of this rise are that workers are going to be easier find and the pressure on wages is going to be lower than pre-COVID. Indeed, anecdotally worker shortages during the recent kiwifruit picking season were less acute than in past seasons. Moreover, lower wages and increased availability of labour should support higher agricultural production and profits than would otherwise be the case.

A second implication is that new workers potentially could come from a different cohort to that which normally enter the industry. For example, the Ministry of Social Development has reported that new job seeker benefit recipients over the lockdown have had little or no recent benefit history and have had higher lost earnings compared to recipients over the same period a year ago.

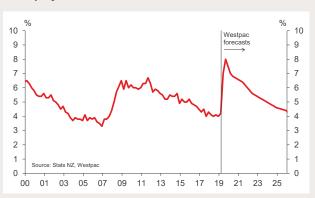
From this, we can infer that many of those put out of work during the lockdown are more skilled and may be relatively more productive compared to those usually in the pool of available workers. Although, we note that a lack of agriculture-specific work experience may require these workers to be trained up or used in a different way.

Accordingly, this feature of the lockdown presents a rare opportunity for the sector. And the question then becomes how can agriculture make best use of these newly available workers?

One starter for ten is that this may be a good time to introduce new technology or make better use of any underused on-farm (orchard) tech. Indeed, the different cohort of workers is likely to be relatively tech-savvy.

We also acknowledge that some workers may not stay long and prefer to return to their 'home industries' in time. Either way, we believe its important that agriculture put its best foot forward as these former workers also have the potential to become future either service partners to and or advocates for the agricultural industry.

Unemployment rate

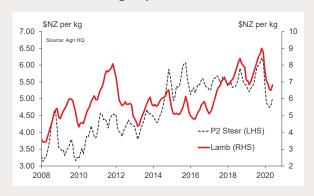


Meat Sector: Triple whammy.

During the lockdown phase, the meat sector has been hardest hit. This hit stems from COVID combining with drought and the seasonal peak in slaughter. This combination culminated in a large meat processing backlog (physical distancing requirements reduced meat processing capacity to around 50% at many plants) and ultimately a steep fall in meat prices, along with rising costs as farmers held on to stock for longer than they would have otherwise.

Moreover, the lockdown curbed food service demand (i.e. restaurants and cafes), hitting prices for more expensive meat cuts hardest. At the low point, farmgate meat prices fell by between 20% and 30% from the end of 2019. However, we note that prices ended 2019 at or near record high levels. Lamb prices, for example, are still above average.

Beef and lamb farmgate prices



In the post-lockdown phase, we expect a temporary rebound in farmgate prices as the impact of the drought fades and peak supply passes. Processing capacity will also get back closer to normal, removing that bottleneck. Meanwhile, broad restaurant and general food service demand will see a temporary bump as global lockdown restrictions ease.

In the recession phase, the outlook for meat prices is mixed, with the impact of the global recession balanced by supply disruptions such as the ongoing impact of African Swine Fever. If anything, we expect beef prices to come under more pressure than lamb prices as US beef production will eventually recover (assuming meatplant capacity returns), while New Zealand and Australian lamb supply remains constrained on the long-established trend of falling sheep numbers.

Horticulture Sector: Kiwifruit sailing against the COVID wind.

In the lockdown phase the horticulture sector has been little impacted from COVID. Importantly, there appears to have been a jump in global demand for fruit loaded with vitamin C like kiwifruit as consumers have sought out healthy foods as a safeguard response to the pandemic.

As a result, the kiwifruit export season is off to a flying start with record prices and volumes. Gold kiwifruit's performance to date has been particularly impressive as the stellar prices have been achieved, despite a new record high crop and gold's relatively high price point. Indeed, we note that this month Zespri has increased its price guidance for the 2020/21 season and even then, we would argue that the new estimate is still on the conservative side given the excellent start to the export season.

Kiwifruit export values



Meanwhile, green kiwifruit exports are also performing well to date. This strength is less of a surprise to us as the green crop was largely flat on last season and as green's price point is lower than gold's.

In addition to kiwifruit's strong start to the export season, we note strong starts to 2020 by the apple and wine sector. However, we suspect that the strength in these sectors owes more to the weakness in the New Zealand dollar than any particular strength in demand or export prices.

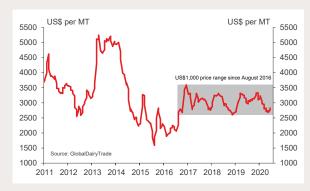
With this in mind and without the benefits of high vitamin C content, we expect apple and wine export prices to fall over the recession phase. Moreover, we expect similar price trends for other export-focused fruit and vegetables, and see a greater risk of larger price falls for premium products like sauvignon blanc, cherries and rocket apples.

Dairy sector: Down, but not out.

Looking at dairy during the lockdown phase, it has ended up somewhere in between meat and horticulture. Dairy demand and prices fell moderately as the pandemic emerged. For example, whole milk powder prices fell by around 15% between January and May.

This price fall was moderate in the context of historical dairy price swings. For example, during the 2015-2016 dairy downturn, whole milk powder prices fell a whopping 70% from peak to trough. Moreover, prices this year have largely stayed within the tight \$1,000/MT range exhibited since the 2016/17 season.

Whole milk powder prices



More recently (in the post-lockdown phase), global prices have stabilised and begun to recover as lockdown restrictions globally have eased. We anticipate that this tick-up will continue in the short-term. Also this recovery has kicked in sooner than we anticipated. And on this basis, on 17 June, we revised our milk 20/21 milk price forecast up by 20 cents to \$6.50/kg.

In addition, note we have built in some commodity price weakness into our milk price forecast later in the season (i.e. over the recession phase). As stated above, we expect the global recession will again weigh moderately on food (dairy) demand and prices over the medium term.

At this early juncture of the season and with ongoing COVID-related uncertainties, we note that a wide range of milk prices are possible. Indeed, Fonterra's milk price forecast range is a wide \$5.40-\$6.90/kg and gives a clear indication of the level of uncertainty, especially considering that Fonterra's forecast range at this time last season was \$1.00/kg (vs. \$1.50/kg now).

Also as mentioned in the high-level section, so far key dairy export markets in China, South East Asia and the Middle East have not had a 'second wave' of infections. If a second wave were to hit these markets and see lockdown restrictions resume, then we would expect larger price falls and the bottom of Fonterra's price range to come more into play.

Contact the Westpac economics team.

Dominick Stephens, Chief Economist

+64 9 336 5671

Michael Gordon, Senior Economist

+64 9 336 5670

Satish Ranchhod, Senior Economist

+64 9 336 5668

Nathan Penny, Senior Agri Economist

| +64 9 348 9114

Paul Clark, Industry Economist

6 +64 9 336 5656

Any questions email:

economics@westpac.co.nz

Past performance is not a reliable indicator of future performance. The forecasts given in this document are predictive in character. Whilst every effort has been taken to ensure that the assumptions on which the forecasts are based are reasonable, the forecasts may be affected by incorrect assumptions or by known or unknown risks and uncertainties. The ultimate outcomes may differ substantially from these forecasts.

Disclaimer.

Things you should know

Westpac Institutional Bank is a division of Westpac Banking Corporation ABN 33 007 457 141

Disclaimer

This material contains general commentary, and market colour. The material does not constitute investment advice. Certain types of transactions, including those involving futures, options and high yield securities give rise to substantial risk and are not suitable for all investors. We recommend that you seek your own independent legal or financial advice before proceeding with any investment decision. This information has been prepared without taking account of your objectives, financial situation or needs. This material may contain material provided by third parties. While such material is published with the necessary permission none of Westpac or its related entities accepts any responsibility for the accuracy or completeness of any such material. Although we have made every effort to ensure the information is free from error, none of Westpac or its related entities warrants the accuracy, adequacy or completeness of the information, or otherwise endorses it in any way. Except where contrary to law, Westpac and its related entities intend by this notice to exclude liability for the information. The information is subject to change without notice and none of Westpac or its related entities is under any obligation to update the information notice and none of Westpac or its related entities is under any obligation to update the information or correct any inaccuracy which may become apparent at a later date. The information contained in this material does not constitute an offer, a solicitation of an offer, or an inducement to subscribe for, purchase or sell any financial instrument or enter a legally binding contract. Past performance is not a reliable indicator of future performance. Whilst every effort has been taken to ensure that the assumptions on which the forecasts are based are reasonable, the forecasts may be affected by incorrect assumptions or by known or unknown risks and uncertainties. The ultimate outcomes may differ substantially from these forecasts. and uncertainties. The ultimate outcomes may differ substantially from these forecasts.

Australia: Westpac holds an Australian Financial Services Licence (No. 233714). This material is provided to you solely for your own use and in your capacity as a wholesale client of Westpac.

New Zealand: In New Zealand, Westpac Institutional Bank refers to the brand under which products New Zealand: In New Zealand, Westpac Institutional Bank refers to the brand under which products and services are provided by either Westpac or Westpac New Zealand Limited ("WNZL"). Any product or service made available by WNZL does not represent an offer from Westpac or any of its subsidiaries (other than WNZL). Neither Westpac nor its other subsidiaries guarantee or otherwise support the performance of WNZL in respect of any such product. The current disclosure statements for the New Zealand branch of Westpac and WNZL can be obtained at the internet address www.westpac. co.nz. For further information please refer to the Product Disclosure Statement (available from your Relationship Manager) for any product for which a Product Disclosure Statement is required, or applicable customer agreement. Download the Westpac NZ QFE Group Financial Advisers Act 2008 Pisclosure Statement at www.westpac. Disclosure Statement at www.westpac.co.nz.

China, Hong Kong, Singapore and India: This material has been prepared and issued for distribution in Singapore to institutional investors, accredited investors and expert investors (as defined in the China, Hong Kong, Singapore and India: This material has been prepared and issued for distribution in Singapore to institutional investors, accredited investors and expert investors (as defined in the applicable Singapore laws and regulations) only. Recipients in Singapore of this material should contact Westpac Singapore Branch in respect of any matters arising from, or in connection with, this material. Westpac Singapore Branch holds a wholesale banking licence and is subject to supervision by the Monetary Authority of Singapore. Westpac Hong Rong Branch holds a banking license and is subject to supervision by the Hong Kong Monetary Authority. Westpac Hong Rong branch also holds a license issued by the Hong Kong Securities and Futures Commission (SFC) for Type 1 and Type 4 regulated activities. This material is intended only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance. Westpac Shanghai and Beijing Branches hold banking licenses and are subject to supervision by the China Banking and Insurance Regulatory Commission (CBIRC). Westpac Mumbai Branch holds a banking license from Reserve Bank of India (RBI) and subject to regulation and supervision by the RBI.

UK: The contents of this communication, which have been prepared by and are the sole responsibility of Westpac Banking Corporation London and Westpac Europe Limited. Westpac (a) has its principal place of business in the United Kingdom at Camomile Court, 23 Camomile Street, London EC3A 7LL, and is registered at Cardiffi in the UK (as Branch No. BR00106), and (b) authorised and regulated by the Australian Prudential Regulation Authority in Australia. Westpac is authorised in the United Kingdom by the Prudential Regulation Authority. Westpac is subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority are available from us on request. Westpac Europe Limited is a company registered in England (number 05660023) and is authorised by the Prudential Regulation Authority and tregulated by the Financial Conduct Authority and the Prudential Regulation Authority.

This communication is being made only to and is directed at (a) persons who have professional experience in matters relating to investments who fall within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (b) high net worth entities, and other persons to whom it may otherwise lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). Any person who is not a relevant persons should not act or rely on this communication or any of its contents. The investments owhich this communication relates are only available to and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such investments will be engaged in only with, relevant persons any person who is not a relevant person should not act or rely upon this communication or any of its contents. In the same way, the information contained in this communication is intended for "eligible counterparties" and "professional clients" as defined by the rules of the Financial Conduct Authority and is not intended for "retail clients". With this in mind, Westpac expressly prohibits you from passing on the information in this communication to any third party. In particular this communication and, in each case, any copies thereof may not be taken, transmitted or distributed,

directly or indirectly into any restricted jurisdiction. This communication is made in compliance with the Market Abuse Regulation (Regulation(EU) 596/2014).

Investment Recommendations Disclosure

The material may contain investment recommendations, including information recommending an investment strategy. Reasonable steps have been taken to ensure that the material is presented in a clear, accurate and objective manner. Investment Recommendations for Financial Instruments covered by MAR are made in compliance with Article 20 MAR. Westpac does not apply MAR Investment Recommendation requirements to Spot Foreign Exchange which is out of scope for MAR.

Unless otherwise indicated, there are no planned updates to this Investment Recommendation at the time of publication. Westpac has no obligation to update, modify or amend this Investment Recommendation or to notify the recipients of this Investment Recommendation should any information, including opinion, forecast or estimate set out in this Investment Recommendation change or subsequently become inaccurate.

Westpac will from time to time dispose of and acquire financial instruments of companies covered in this Investment Recommendation as principal and act as a market maker or liquidity provider in such

Westpac does not have any proprietary positions in equity shares of issuers that are the subject of an investment recommendation.

Westpac may have provided investment banking services to the issuer in the course of the past 12

We stpac does not permit any issuer to see or comment on any investment recommendation prior to its completion and distribution.

Individuals who produce investment recommendations are not permitted to undertake any transactions in any financial instruments or derivatives in relation to the issuers covered by the investment recommendations they produce.

Westpac has implemented policies and procedures, which are designed to ensure conflicts of interests are managed consistently and appropriately, and to treat clients fairly.

The following arrangements have been adopted for the avoidance and prevention of conflicts in interests associated with the provision of investment recommendations.

- Chinese Wall/Cell arrangements:
- physical separation of various Business/Support Units;
- and well defined wall/cell crossing procedures;
- a "need to know" policy;
- documented and well defined procedures for dealing with conflicts of interest;
- steps by Compliance to ensure that the Chinese Wall/Cell arrangements remain effective and that such arrangements are adequately monitored.

U.S: Westpac operates in the United States of America as a federally licensed branch, regulated by the Office of the Comptroller of the Currency. Westpac is also registered with the US Commodity Futures Trading Commission ("CFTC") as a Swap Dealer, but is neither registered as, or affiliated with, a Futures Commission Merchant registered with the US CFTC. Westpac Capital Markets, LLC ("WCM"), a Wholly-owned subsidiary of Westpac, is a broker-dealer registered under the U.S. Securities Exchange Act of 1934 ("the Exchange Act and member of the Financial Industry Regulatory Authority ("FINRA"). This communication is provided for distribution to U.S. institutional investors in reliance on the exemption from registration provided by Rule 15a-6 under the Exchange Act and is not subject to all of the independence and disclosure standards applicable to debt research reports prepared for retail investors in the United States. WCM is the U.S. distributor of this communication and accept responsibility for the contents of this communication. All disclaimers set out with respect to Westpac responsibility for the contents of this communication. All disclaimers set out with respect to Westpac apply equally to WCM. If you would like to speak to someone regarding any security mentioned herein, please contact WCM on +1 212 389 1269. All disclaimers set out with respect to Westpac apply equally

Investing in any non-U.S. securities or related financial instruments mentioned in this communication may present certain risks. The securities of non-U.S. issuers may not be registered with, or be subject to the regulations of, the SEC in the United States. Information on such non-U.S. securities or related financial instruments may be limited. Non-U.S. companies may not subject to audit and reporting standards and regulatory requirements comparable to those in effect in the United States. The value of any investment or income from any securities or related derivative instruments denominants a currency other than U.S. dollars is subject to exchange rate fluctuations that may have a positive or adverse effect on the value of or income from such securities or related derivative instruments.

The author of this communication is employed by Westpac and is not registered or qualified as a research analyst, representative, or associated person under the rules of FINRA, any other U.S. self-regulatory organisation, or the laws, rules or regulations of any State. Unless otherwise specifically stated, the views expressed herein are solely those of the author and may differ from the information, views or analysis expressed by Westpac and/or its affiliates.